

REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

New Claims 15-18 have been introduced. New Claims 15-16 further recite the portions of the key having different reflectivity to light are provided at a portion of the key which is inserted in the key cylinder for starting the engine. Basis for this is evident from Figure 2. New Claims 17-18 further recite that the code reader comprises a light diffuser. Basis for this is found in the light diffuser 9b.

It is conventional to start the engine of a vehicle by insertion of a key into a cylinder followed by rotation of the key. More recently, it has been known to provide the key with a unique identification code which is electromagnetically read by an antenna coil surrounding the key cylinder, wherein the vehicle engine is permitted to start only if a reference code memorized by the vehicle and the read identification code are identical. An example of such a system may be found in U.S. patent 6,794,988 (Weiss et al), wherein an antenna 14 may be used to electromagnetically read a unique code embedded in the transponder 25 within the key 12. However conventional ignition keys having a code communication function have not been entirely satisfactory due to factors including the bulk required for the antenna and receiver, and the ease with which the code can be copied electromagnetically.

According to a feature of the invention set forth in the claims, the code provided on the ignition key is instead one having portions with different light reflectivity. The code can therefore be read by a code reader sensitive to differences in reflected light. Such an optical code is more difficult to copy and can be read without the need for a bulky electromagnetic antenna. For example, the code 3a may take the form of the two-dimensional pattern of different reflectivities provided on the usually metallic leg portion 3d of a key shaft. In this case, the code is provided at a portion of the key which is inserted in the key cylinder for

starting the engine, and so the code reader can be provided at the key cylinder as is shown in Figure 3.

Claims 1-4, 6-9, 11, 12 and 14 were rejected under 35 U.S.C. § 103 as being unobvious over Weiss et al in view of U.S. patent 4,661,806 (Peters et al). The Examiner there recognized that Weiss et al discloses an electromagnetic coding system but deemed that an optical code would have been obvious in Weiss et al in view of the teachings of Peters et al. However, this rejection is respectfully traversed.

As the Examiner has recognized, Weiss et al discloses the use of an electromagnetic key code and reader, and so the Examiner is obligated to establish that it would have been obvious for one skilled in the art at the time of invention to have modified Weiss et al to instead use an optical key code. In order to insure against hindsight, a *prima facie* case of obviousness under 35 U.S.C. § 103 requires that any suggestion for modifying Weiss et al be taken from analogous prior art, i.e., prior art that is reasonably pertinent to the particular problem with which the inventor was concerned. M.P.E.P. § 2141.01(a). For example it has been held that a fastener for use in garments is not analogous to a hose clamp because it would not reasonably be expected that those skilled in the art would look to garment fasteners in order to solve a problem in hose clamps. *Id.* Applicant respectfully submits that Peters et al is not reasonably pertinent to the problem of coding a key to permit the start of an engine, and is not analogous prior art.

Peters et al discloses a computer controlled key management system wherein keys are attached to key holders which are retained in a storage area when not in use. For example, a cabinet 20 contains a plurality of key holder housings 40, each provided with a latch 50 and with pins 52 which can fit into pin holder 54 when the key and key holder 58 are inserted in the housing 40. The latch can therefore retain the key holder and key until an access signal is generated, so that the key is securely stored.

In a further embodiment disclosed in Figure 13 key identification information is contained on a magnetic strip 422 of the key holder 440 to which the key 444 is attached. This magnetic information may be read by a magnetic read head 436 when the key is introduced into the key housing, whereby the key can be retained within the housing. Figure 17 teaches that the code 542 and read head 536 may instead be optical elements. In each case, however, the code is used for identification and securement of the stored key and there is no evidence that the code may be used to permit the start of an engine.

It may therefore be appreciated that Peters et al is not analogous to either the present invention or the electromagnetic ignition activation code of Weiss et al. In both the present invention and Weiss et al a code is provided on the key itself and cooperates with a controller to permit the start of the vehicle engine when the code is judged to be identical with a reference code. Thus the “particular problem with which the inventor was concerned” is the manner in which a code used to judge whether the start of a vehicle engine is permissible may be provided at an ignition key. Those skilled in the art would therefore look, for guidance in solving this problem, to analogous prior art which similarly provides a code at an ignition key to permit judging whether the start of the engine is permissible.

Peters et al, on the other hand, has nothing to do with the aforementioned problem. The code 542 on the key holder 540 in Figure 17 of Peters et al is not provided on the ignition key itself and does not permit judgment whether the start of the engine is permitted. Instead, the code is merely provided on a key holder and has no relationship to the functioning of the key to start the engine: the key holder is provided simply to cooperate with the key holder housing in order to securely retain the key during periods of nonuse, and the code is provided for releasing the key holder from the housing, and not for judging whether start of the engine is permitted.

Thus the problem with which Peters et al is concerned is that of facilitating the storage of a key and key holder when not in use, and determining the identification of the holder to provide access to the key holder when properly selected (column 1, lines 44-54). This is completely different from the problem of judging whether the start of an engine is permitted by the insertion of the key. One skilled in the art, being presented with the problem of judging whether the start of an engine is permitted by the insertion of the key, would not look for guidance to prior art in which the key is not being used to start an engine but is merely being stored. Accordingly Peters et al is not analogous prior art and could not provide a suggestion for those skilled in the art to modify Weiss et al. The rejections based upon Weiss and Peters et al, or Weiss and Peters and further in view of additional prior art (paragraph 3) are therefore improper and their withdrawal is respectfully solicited.

New Claims 15 and 16 further recite that the portions of the key having different reflectivity to light are provided at an external surface portion of the key which is inserted in the key cylinder for starting the engine. This may be contrasted with Peters wherein the code 542 is provided on a key holder 540 separate from the functional portion of the key 544. Therefore, even if one skilled in the art were to be motivated to draw a teaching from Peters et al for modification of Weiss et al, Peters et al would suggest providing a code on a separate key holder rather than on an external surface portion of the key which is inserted in the key cylinder for starting the engine.

New Claims 17 and 18 further recite that the code reader or reading means comprises a light diffuser. Since the portions of the key having different light reflectivity are provided at a normally highly reflective external surface portion of the key which is inserted in the key cylinder for starting the engine, the high reflectivity of the key and code can result in saturation of the key reader. The light diffuser restrains the optical power of the reflected light and minimizes this risk (paragraph [0046]). There is no suggestion for such a diffuser in

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Weiss et al or Peters. Indeed, the code element in Figure 17 of Peters simply appears to be a conventional bar code which would not present the aforementioned problem.

Applicant therefore believes that the present application clearly defines over the cited prior art and respectfully solicits an early Notice of Allowability.

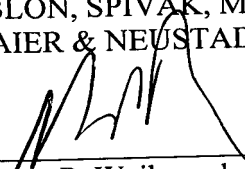
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